

STATE OF MISSOURI ANNUAL RECYCLING REPORT



Acknowledgements

Published by the state of Missouri Office of Administration, Division of General Services

*Special thanks to the **Department of Natural Resources Solid Waste Management Program, Missouri Interagency Recycling Committee (MIRC), Missouri's Market Development Program, and department recycling coordinators and purchasing staff** who contributed to this report. The Missouri State Recycling Program thanks all **state employees** for their ongoing efforts to reduce, reuse, recycle, and buy recycled-content products.*

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*A special thank you to the **Department of Economic Development's Energy Division** for calculating the economic and environmental savings of state government recycling (see p.13).*

Cover photos (clockwise from upper left corner): Earth Day volunteer; recovering printer cartridges from Central Missouri Correctional Center; Mid-MO Solid Waste Management District presentation (Fix-It Fair); uneaten food found in trash during 2018 Zero Waste Challenge; Rebecca Roth (recycling intern) & Rob Didriksen at scholarship award ceremony; bale of plastic wrap; America Recycles Day "How2Recycle" display; Recycling Champion award made from recycled window glass.



Michael L. Parson
Governor



Cynthia A. Dixon
Division Director

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Commissioner






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I am honored to present the Missouri State Recycling Program's Annual Report.

In accordance with RSMo 34.031, the Office of Administration is submitting the Fiscal Year 2018 (FY18) Annual Recycling Report to summarize state government's accomplishments in the areas of recycling, waste reduction, and recycled content product procurement for the period of July 1, 2017, through June 30, 2018.

State law directs state agencies to implement policies for recycling, waste reduction, and procurement of recycled content products. The Missouri State Recycling Program, administered by the Office of Administration, Division of General Services, is responsible for assisting state agencies in these areas. The State Recycling Program works cooperatively with the Missouri Interagency Recycling Committee (MIRC) to facilitate recycling and waste reduction by state employees.

As a result of the efforts of state employees and MIRC, the Recycling Program continues to register solid financial returns and steady development of the State's recycling collection infrastructure. State employees continue to reduce the amount of waste generated at state facilities and the related costs of waste disposal. Recycling and waste reduction highlights from FY18 include:

-  12,405,432 pounds of materials recycled.
-  283 billion BTUs of energy saved from total pounds of material recycled. This is equivalent to the annual energy consumption of 2,460 homes.
-  \$6,032,625 of recycled-content products purchased.
-  \$144,163 in revenue generated for the state recycling fund.
-  \$337,257 in waste disposal costs avoided.

Waste reduction achievements of several agencies are summarized on pages 14 – 17 of this report. We appreciate the support of the General Assembly in our recycling efforts.

Sincerely,

A handwritten signature in black ink that reads "Cynthia A. Dixon".

Cynthia A. Dixon
Division Director

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I. Missouri State Recycling Program Organization

What is the Missouri State Recycling Program?

The Missouri State Recycling Program (**MSRP**) was established in 1989 when legislation added sections 34.031 and 34.032 to Chapter 34 of the MO Revised Statutes.

Mission Statement

The Missouri State Recycling Program partners with state employees and agencies to facilitate fiscally and environmentally responsible strategies for reuse and recycling of state property.

Who is the MSRP?

There are three components to the **MSRP's** organizational chart.

- The **state recycling manager** and **communications coordinator** are dedicated to the planning and administration of recycling and waste reduction activities.
- The **Missouri Interagency Recycling Committee** serves an important purpose by providing input on recycling initiatives and communicating with state employees about various recycling programs.
- The efforts of **state employees** to recycle ensures the success of any recycling initiative. State employees who recycle are considered a part of the **Missouri State Recycling Program**.

What is the Missouri Interagency Recycling Committee?

The Missouri Interagency Recycling Committee (**MIRC**) was established in 1994. It was recognized that the **MSRP** needed a way to communicate procurement and recycling policies throughout state government. **MIRC** is a vital component of the **MSRP** and meets regularly to discuss recycling collection, waste reduction, recycling market conditions and recycled product procurement.

Who is MIRC?

The Recycling Committee is composed of representatives from various state departments (executive, judicial, and legislative). To learn more about recycling in your department, please contact your **MIRC** member.

A list of members is located on the internet at <http://oa.mo.gov/general-services/state-recycling-program/missouri-interagency-recycling-committee-mirc>



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2018 Missouri Interagency Recycling Committee (MIRC)

MIRC members function as the core of the Missouri State Recycling Program (MSRP). The work of committee members varies from providing important input regarding MSRP projects such as recycling contracts and communicating to employees in their department about recycling initiatives.

Each year MIRC members are involved with the annual recycling award process and completing an annual recycling questionnaire. The questionnaire is a key component for collecting data for the annual recycling report. Results of the FY18 recycling questionnaire can be found on pages 7, 18, and 21 - 25 of this report. The annual reporting process provides an important assessment of state government recycling efforts each fiscal year.



L. to R. Sitting: Barbara Li (MDC), Debra Goodman (DPS-MOANG), Sharman McPherson (DPS-MOANG), Angie Bisges (OSCA), Kristin Tipton (EIERA), | **Standing:** Leah Strid (OA), Tom Nield (Sec. of State), Jim Aslakson (MDC), Kevin Kelly (MoDOT), Leslie Winter (DHE), Kenny Kusimba (MoDOT), Rob Didriksen (OA), Anita Stansfield (DNR), Nancy Tennison (Treasurer's Office), Michael Hancock (Supreme Court), Lori Bishop (DESE), Greg Bernskoetter (DED), Tanya Eddy (Insurance), | **Not Pictured:** Jonathan Thompson (OA), Glenda Vanderfeltz (OA), Alan Clements (MDA), Karen Wood (MDA), Beth Lambert (DOC), Ernie Wren (DOC), Doug Fear (DED), Lisa Morris (DESE), Leroy Wade (DHE), Grady Martin (Insurance), Kim Sandbothe (Finance), Debbie Davis (Credit Unions), Leann Lorts (PR), Terry Doerhoff (DOLIR), Richard Kempker (DNR), Stacia Steinman (DPS), Brandye Freeland-Riggert (DPS-MOANG), Brenda Davis (DOR), Gary Burlingame (DOR), Mitch Kolb (Lottery), Melina Schepelerle (STC), Kevin Baclesse (DSS), Jon Varner (MoDOT), Dennis Matl (MCHCP), Ron Childs (MOSERS), Michelle Hallford (Governor's Office), Kerry Kroll (Attorney General's Office), Mark Henley (Auditor's Office), Dawn Korsmeyer (Supreme Court), Greg Sandbothe (House of Reps), Jon Burton (Senate)

FY18 Overview

Recycling Rankings

Where Does All of This Information Come From?

Each year the State Recycling Program distributes the annual recycling questionnaire to state agencies through the Missouri Interagency Recycling Committee (MIRC). The questionnaire serves several purposes which include:

- Informing state employees and agencies about available recycling services.
- Communicating to employees the amounts of materials recycled via state contracts as well as dollar amounts of recycled products purchased from state contractors.
- Requesting collection data to quantify amounts of materials recycled.
- Requesting procurement data to quantify dollars spent on recycled-content products.

A summary of the results of this information gathering process is provided on this page. For more detailed information please see appendices A and B.

Top 3 Number of Gallons Recycled

1.	Motor Oil	58,678
2.	Cooking Oil	5,271
3.	Anti-freeze	4,031

Top 3 Number of Items Recycled

1.	Fluorescent Lamps	60,250
2.	Printer Cartridges	9,180
3.	Cell Phones	567

Recycled-Content Product Purchases More

1.	Metal Products	\$3,281,891
2.	Paper Products	\$2,931,060
3.	Plastic Bags	\$699,925
4.	Carpet/Construction Materials	\$681,635
5.	Office Supplies	\$556,315
6.	Remanufactured Printer Cartridges	\$362,664
7.	Remanufactured Furniture	\$261,410

Scrap Materials Where More Than 50,000 pounds Was Recycled

1.	Scrap Metal	4,839,098
2.	Mixed Paper	3,119,921
3.	Cardboard	1,074,685
4.	Tires	916,251
5.	Commingled Materials	602,860
6.	Tin/Steel Cans	525,998
7.	Food/Yard Waste	355,112
8.	Electronic Scrap	302,772
9.	Aluminum	284,076
10.	Pallets	256,975

State Agencies Recycling More Than 30,000 Pounds

1.	Department of Transportation	5,001,335
2.	Department of Corrections	1,965,935
3.	Department of Natural Resources	696,435
4.	Department of Revenue	636,109
5.	Secretary of State	365,011
6.	Department of Mental Health	285,730
7.	Department of Public Safety	207,711
8.	Department of Conservation	130,949
9.	Office of Administration	101,091
10.	Department of Social Services	38,005

FY18 Overview

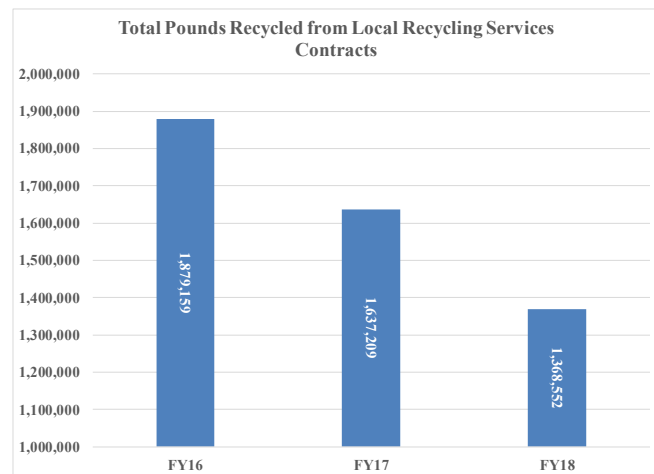
Local Recycling Services

During FY18, the Missouri State Recycling Program administered three local recycling services contracts. State agencies in Jefferson City (JC) had access to contractual recycling of office paper and commingled materials (cardboard, cans, and bottles). Agencies in St. Louis had access to commercial single-stream services (paper, cardboard, cans, and bottles in one container). Kansas City recycling was limited to the Fletcher-Daniels Building, where cardboard and mixed paper were collected in separate streams.

There was a 268,657 pound decrease from FY17 to FY18 for cumulative collection totals for the three local contracts (JC, Kansas City, and St. Louis).

The biggest drop for FY18 occurred with mixed paper in JC, where there was a decrease of 195,794 pounds from FY17 to FY18. Possible reasons for the drop include:

- Increased use of onsite and/or offsite document destruction services.
- Decreased use of paper due to increased use of e-forms and online storage of documents.
- 42,320 pounds of paper was credited to Conservation Department and normally would have been a part of the aggregate number for the JC contract.
- Changes to the way weights of commingled materials are measured (see below).



FY18 marked the 1st full year where actual weights of commingled materials (cardboard, cans, and plastic bottles combined) were reported for JC. Therefore, reporting of a “cardboard-only category” was discontinued in FY18.

In FY17 cardboard, cans, and plastic bottles were measured separately based on estimated weights. When combining the weights of each of the materials in the commingled mix for FY17, it was estimated that 443,791 pounds of cardboard, cans, and plastic bottles were recycled. In FY18 the total amount of commingled material recycled in JC was based on an actual weight of 297,565 pounds. The difference of 146,226 pounds also explains the drop in “total pounds recycled” from FY17 to FY18 (see chart above).

FY18 Summary of Total Pounds Collected from Local Recycling Contracts

	Kansas City	St. Louis	Jefferson City	Material Totals
Mixed Paper	4,672		912,068	916,740
Cardboard	7,538			7,538
Commingled		146,709	297,565	444,274
Plastic Wrap			1,746	1,746
Total Pounds	12,210	146,709	1,211,379	1,370,298

FY18 Overview

Local Recycling Services

Jefferson City

FY18 was the first full fiscal year where a new contract for state government recycling was in operation.

The new contract, awarded in January 2017, has several significant changes which are outlined below.

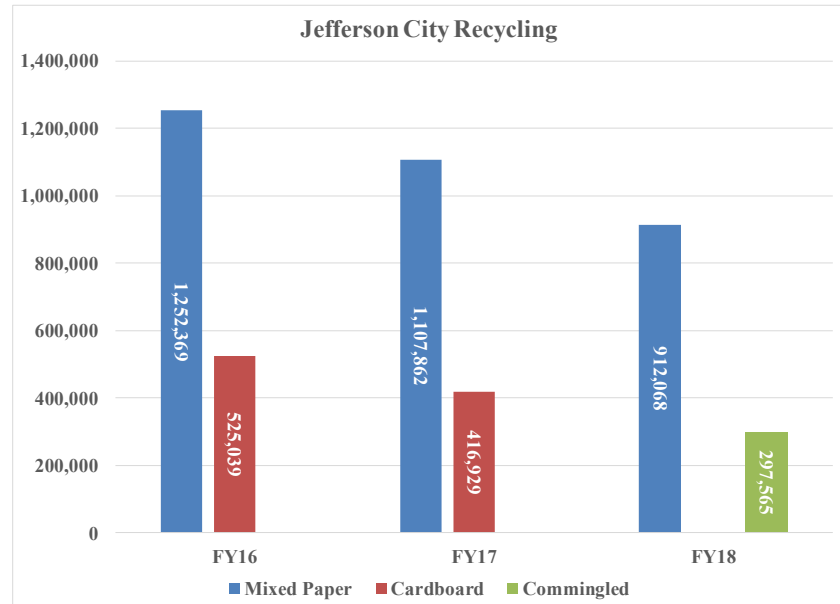
The new contractor provided recycling dumpsters for collection of loose cardboard

and bags of cans and plastic bottles. This allowed the State Recycling Program to remove its fleet of recycling dumpsters from about 50 locations throughout Jefferson City. This was beneficial for the State Recycling Program as management of the recycling dumpsters became the contractor's responsibility.

The new contract also allowed for cardboard, cans, and plastic bottles to be combined into a commingled mix of materials to be recycled. Mixed office paper continued to be collected separately from all other materials.

Reporting of materials collected also changed under the new agreement. Under the old contract the volume of cardboard, cans, and bottles recycled was reported and then a weight was estimated for each of these materials. Under the new contract the actual weights of material collected are reported. The actual weights received are an aggregate number for cardboard, cans, and bottles combined. Therefore, beginning in FY18 the weight of cardboard, cans, and bottles will be combined and reported as commingled material recycled while reporting for a "cardboard only" category was discontinued in FY18.

This new reporting method provides some insight as to why the total amount of material recycled through the Jefferson City contract dropped from FY17 to FY18 (see chart above).



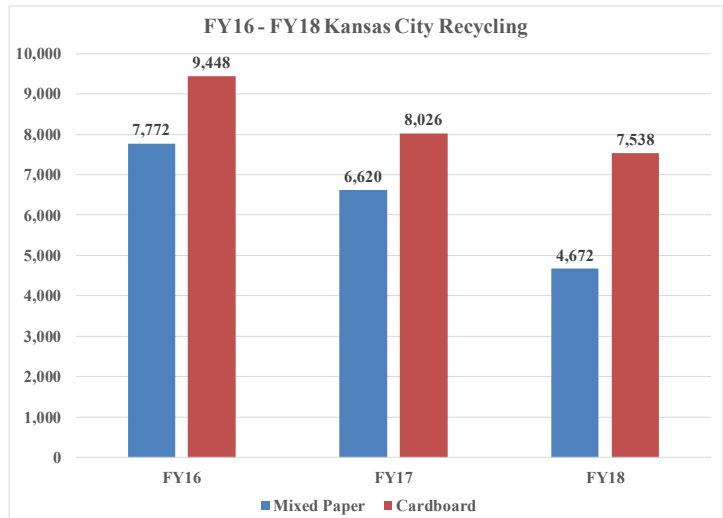
FY18 Overview

Local Recycling Services

Kansas City

In FY18, the State Recycling Program continued to work with the Fletcher Daniels State Office Building to offer recycling services. Recycling services for a leased property located at 3717 S. Whitney Ave stopped in FY18 due to the building being vacated.

The total amount of paper and cardboard recycled at the Fletcher Daniels State Office Building in FY18 was 12,210 pounds.



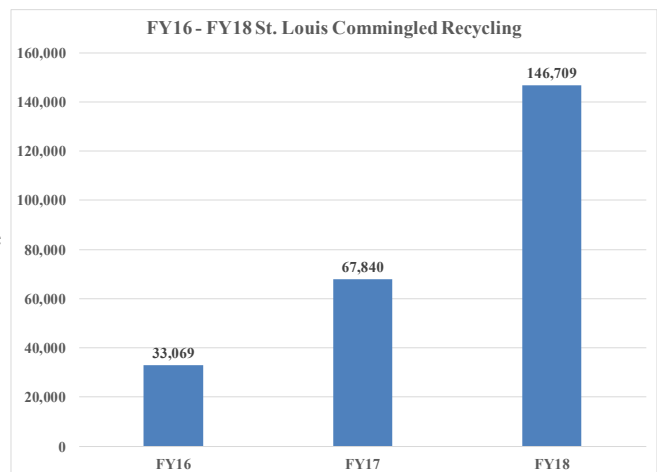
The State Recycling Program strives to be informed about recycling activities throughout state government; however, there are likely many recycling programs that are not known to State Recycling. With this being said, there are probably other state government offices where recycling is happening in the Kansas City area.

St. Louis

A new contract for recycling services in St. Louis was awarded in May of 2017.

The contract provides a recycling dumpster collection service where all materials (paper, cardboard, cans, and bottles) are collected in the same container. This is also known as commingled or single-stream recycling.

There were a total of nine state agency locations using the contract including five state-owned buildings managed by the Office of Administration; two Conservation Department locations; one Natural Resources location; and one Department of Corrections location.



With the new contract, the state transitioned from a cart collection system to a dumpster collection system which is a more economical way to collect materials for recycling. This is especially important in a geographically large area such as St. Louis where there is considerable distance between pickups.

With the new contract and reporting being utilized for an entire fiscal year, there was a 116% increase in the amount of material collected when compared to FY17.

FY18 Overview

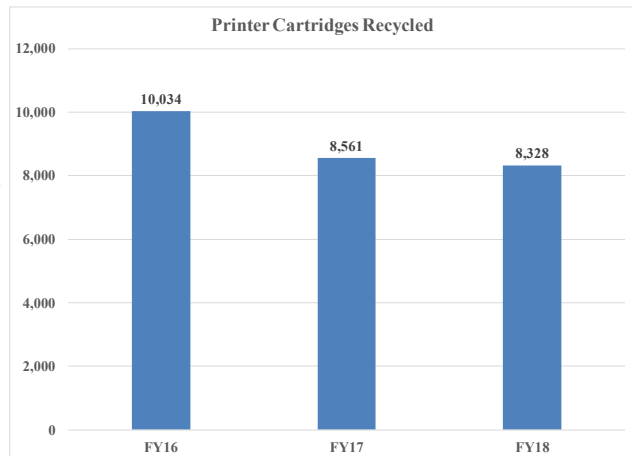
Statewide Recycling Services

No-Cost Services

The Missouri State Recycling Program administered one no-cost statewide recycling service for printer cartridges in FY18.

Printer Cartridge Recycling

State agencies have numerous options for recycling printer cartridges. The chart to the right details only those recycling activities where state agencies used the State Recycling Program's printer cartridge collection service or Missouri Vocational Enterprises' (MVE) service. Agencies that returned printer cartridges to the "original equipment manufacturer" (OEM) are not accounted for in this chart. The total number of printer cartridges recycled or remanufactured through MVE and the State Recycling Program stayed about the same from FY17 to FY18.



Fee-Based Services

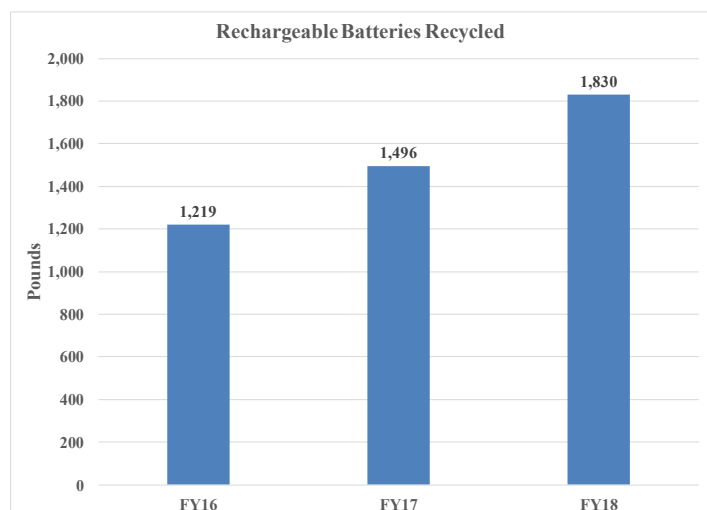
The Missouri State Recycling Program administered four fee-based contracts for document destruction, tires, lamp recycling, and batteries.

Battery Recycling

Nine departments with more than 25 locations utilized battery recycling services in FY18, recycling 1,830 pounds of mostly rechargeable batteries.

There was a 22% increase in collection amounts from FY17 to FY18. This may be attributable to state agencies having access to two contracts in FY18 where battery recycling services were offered.

Over the past 10 years, Missouri state government efforts have resulted in the recycling of 32,541 pounds of rechargeable batteries.



Statewide in FY18, agencies recycled 50,289 pounds of batteries (single-use & rechargeable). The chart on this page only shows pounds of batteries recycled through state contracts.

FY18 Overview

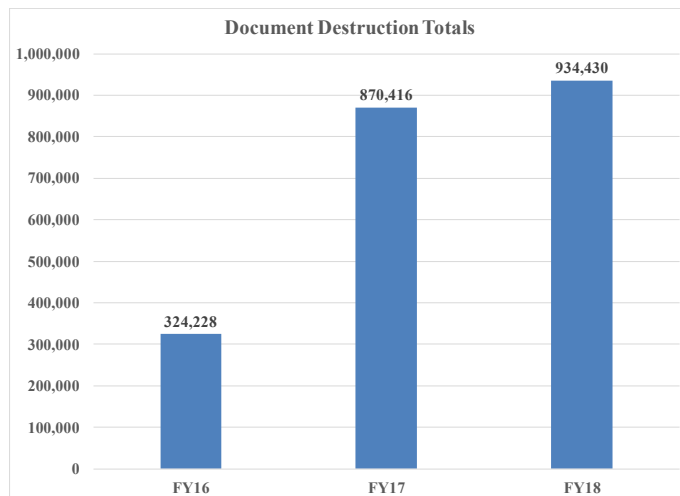
Statewide Recycling Services

Document Destruction Contract

There was a 7% increase in the pounds of documents destroyed and recycled from FY17 to FY18. The significantly lower amount reported in FY16 is a result of this being a year when the state transitioned to a new contract and a former contractor did not provide reporting for part of FY16.

The contract only covers the central, northwest, and Kansas City regions of the state. Destruction amounts would likely be much higher if the southwest, southeast, and St. Louis regions were covered.

Cost for services varied and was based on document volume and the location of the state agency.



Tire Hauling & Processing

FY18 marked the first full year the “Scrap Tire Hauling, Processing, and Recycling Services” contract was utilized. There was about a 7% drop in the number of tires processed from FY17 to FY18.

	Tires Processed	Pounds of Tires Processed
FY17	20,015	420,306
FY18	18,687	373,740

For a fee, contractors hauled 373,740 pounds of tires or 18,687 “passenger tire equivalents” (PTEs). PTE is used as a way to measure tires. Each PTE is considered to weigh 20 pounds.

Lamp & Ballast Recycling Contract

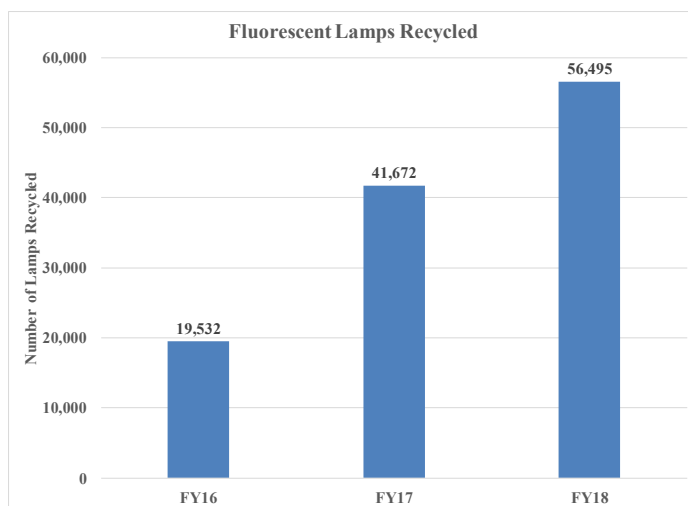
This contract allowed for the recycling of fluorescent lights and related equipment such as ballasts. In addition, batteries could be recycled through this contract.

Due to the mercury contained in fluorescent lighting, used fluorescent bulbs are regulated as universal waste in Missouri. Special packaging, handling, and labeling requirements govern the disposal of fluorescent lighting.

There was a 36% increase in the number of lamps recycled from FY17 to FY18.

This is likely due to several projects

where old lighting was replaced with LED (light-emitting diode) lamps. The State Recycling Program covered costs for several state agencies to recycle fluorescent lamps in FY18.



FY18 Overview

Measuring the Economic and Environmental Benefits of Materials Recycled ¹

The Department of Economic Development, Division of Energy utilized the Environmental Protection Agency's Waste Reduction Model (WARM) as a way to measure the economic and environmental benefits of materials recycled by state agencies in FY18.

Energy Reductions (Economic Benefits) Related to Recycling

The WARM model estimates the energy saved from the modeled recycling waste stream of the state of Missouri represents an estimated 282,853 million BTUs saved versus the waste stream entering a landfill. **This is equivalent to:**

- **Conserving 2,460 households' annual energy consumption, or**
- **Conserving 48,684 barrels of oil, or**
- **Conserving 2,276,705 gallons of gasoline**

Carbon Dioxide Reductions (Environmental Benefits) Related to Recycling

The greenhouse-gas emissions analysis from the WARM model estimates the modeled recycling waste stream of the state of Missouri represents a reduction of approximately 20,150 metric tons of carbon dioxide equivalent versus the waste stream entering a land fill. **This is equivalent to:**

- **Removing annual emissions from 4,330 passenger vehicles, or**
- **Conserving 2,314,507 gallons of gasoline, or**
- **Conserving 857,043 cylinders of propane used for home barbeques**

The WARM model helps us to better understand the benefits of alternative end-of-life waste management decisions such as recycling. This model is a lifecycle assessment tool which considers the energy usage and greenhouse emissions from raw material extraction until product disposal. This includes material assessment, all product transportation, manufacturing, and disposal. The model compares different disposal scenarios such as recycling, landfill, incinerating, composting, and source reduction.

The WARM model does not account for all materials listed in Appendix A of this report. The above carbon dioxide and energy reduction estimates do not include any of the items listed in the table entitled "Number of Items and Gallons Recycled" (books; cell phones; fluorescent lamps; printer cartridges; fuel/oil filters; pallets; anti-freeze; diesel fuel; gasoline; cooking oil; and motor oil). In addition, the following items from the "Number of Pounds" table in Appendix A are not included in the WARM model calculations: textiles; batteries; and ballasts.

1. Department of Economic Development, Division of Energy calculated these estimates utilizing the Environmental Protection Agency's Waste Reduction Model (WARM - Version 14)



FY18 Overview

Recycling Champion Awards

TEAM AWARD: The Missouri State Recycling Program congratulates the Howerton Green Team with the Department of Social Services on its selection for the 2018 team recycling award. The Howerton Green Team was formed in 2007 to maintain ongoing communication with employees, management, and custodial staff.

The Green Team regularly educates employees at the Howerton Building about recycling procedures and mentors new members who want to join the Green Team. They have active email communications, regularly thank employees for recycling efforts, and post signs clearly explaining what items can be recycled where.

Over the past 11 years, the Howerton Green Team's efforts to grow recycling programs have created a very strong recycling culture at the Howerton Building. As their nominator said, ***"The Green Team is the backbone of this recycling culture and for many years the members of this team have consistently ensured there is a voice for recycling at Howerton."***

The Missouri Interagency Recycling Committee was impressed with the Green Team's long-term commitment to assure the success of recycling programs at the Howerton Building. This commitment along with establishing recycling as a part of the Howerton Building's culture were key to the Green Team's selection as the team recipient of the 2018 State Recycling Award.



L to R: Front Row: Brenda Kennedy, Barbara Kliethermes, Jennifer Parker, Sara Stock | Back Row: Carolyn Twardowski, Greg Campbell, John Mier, Ski Collins

INDIVIDUAL AWARD: Kevin Vanover with the Missouri Department of Natural Resources (DNR) was selected for this year's individual award. A combination of his great passion for recycling and rapport with his fellow employees has helped to advance recycling at DNR. Kevin diligently makes sure all cardboard, paper, shredding, and other recyclable items are saved, and independently made arrangements with Current River Workshop to pick up the items at no cost to DNR.



L to R: Tonya Lyons, Linda Moore, Kevin Vanover, Katlynn Steers

He also tracks and reports the amount of recycling. While it's hard to put an exact dollar amount on what he's saved the Department, the cost of having the shredded paper picked up previously was more than \$50 per month, so recycling that alone saves the Department more than \$600 each year. In 2018, between January and June, he recycled more than 800 pounds of paper, 75 pounds of cardboard, and 50 pounds of magazines.

The Missouri State Recycling Program applauds Kevin's initiative to provide recycling options to reduce waste at the Missouri Department of Natural Resources.

FY18 Overview

State Agency Accomplishments

Annual Recycling Award Honorable Mentions

The State Recycling Program thanks those who took the time to make a nomination and at the same time wants to recognize the patience, passion, and persistence the nominees have exercised with their efforts to reduce, reuse, and recycle state government waste.

- Linda Moore, Department of Natural Resources, Southeast Regional Office

State Agency Recycling Efforts Avoid Cost of Waste Disposal

The efforts of agencies statewide resulted in a combined total of 6,203 tons (see Appendix A) of materials recycled in FY18. If this amount of material had been sent to landfills it is estimated the state of Missouri would have paid at least \$337,257 in waste disposal costs. It is possible to calculate this cost avoidance based on the average tipping fee charged to waste haulers in Missouri. Tipping fees are paid by waste haulers for each ton of trash disposed in Missouri's landfills. The average tipping fee in Missouri was \$54.37² per ton in FY18.

The tipping fee is only one cost of doing business as a waste hauler. In addition to the tipping fee, a waste hauler includes labor and transportation costs in the actual amount charged to its customers. Therefore, utilizing the average tipping fee to calculate cost avoidance represents a conservative estimate.

Over the past 10 years, state employees have recycled more than 79,000 tons of material saving the state of Missouri more than \$3.4 million.

Recycling Internship

2018 marked the 3rd year the Missouri State Recycling Program hosted an intern. Rebecca Roth, a senior studying environmental science at Westminster College (Fulton, MO), interned with the program during summer 2018.

Rebecca assisted with the day-to-day operational duties such as supplies distribution and managing the printer cartridge recycling program. She also took the lead with assisting the Jefferson City High School Green Team on a waste reduction project. Using "life cycle assessment" concepts she helped to determine the financial and environmental costs of using disposable, compostable, and reusable plates and cups in the cafeteria.

In fall 2018, Rebecca was one of three students nationally to receive a \$2,000 scholarship from the National Recycling Coalition's Murray J. Fox Scholarship Fund. She was honored at the 2018 Resource Recycling Conference in St. Louis.



Rebecca Roth & Rob Didriksen at
National Recycling Coalition
Scholarship Ceremony

FY18 Overview

State Agency Accomplishments

State Recycling Conference

The State Recycling Program participated in the Missouri Recycling Association's annual conference with 2018 marking the first year that State Recycling's Communication Coordinator, Leah Strid, participated. Also attending the conference was Barbara Li, serving as MIRC member for the Conservation Department. In addition to setting up an exhibit to show state government's successes with reducing waste, State Recycling staff were able to attend several recycling sessions including a workshop about changing recycling behaviors.



Barbara Li & Leah Strid at MORA Conference

Earth Day and the Zero Waste Challenge

2018 marked the 11th year the State Recycling Program has coordinated the Zero Waste Challenge (ZWC) at the Department of Natural Resources' Earth Day event. In 2018, the Jefferson City High School Green Team helped with the ZWC Challenge by setting up containers, hauling materials, and operating the weigh station.

During the Earth Day event, all waste (trash and recycled material) are audited and weighed. Since 2008 about 1,600 pounds of recyclables have been collected, the amount of trash collected has been cut by 63%, and the per capita waste (trash and recycled material) generated has been reduced by 31%.



JC High School Green Team setting up for the 2018 Zero Waste Challenge

The Department of Natural Resources distributes information to participants prior to the event to promote the ZWC. Ideas like pre-cycling are covered where participants are encouraged to only purchase items that can be recycled at the event.

One of the long-term goals of the ZWC is to strive for zero waste.

The challenge for each year's

participants is to reduce the amount of waste (trash and recyclables) as compared to the previous year.

Zero Waste Challenge Measures	Trash (lbs.)	Material Recycled (lbs.)	Waste (trash + material recycled)	% of Waste Recycled	Headcount (number registered)	Per Capita Waste Generation (lbs.)
2016	139.3	90.8	230.1	39.5%	1484	0.16
2017	107.6	122.0	229.6	53.1%	1300	0.18
2018	112	88.6	200.6	44.2%	980	0.20

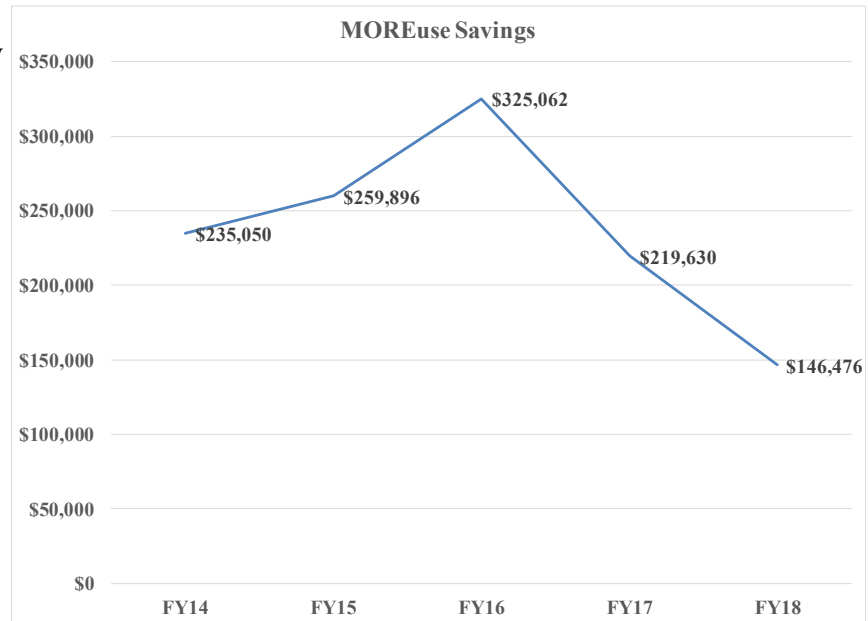
FY18 Overview

State Agency Accomplishments

Surplus Property Reuse Remains Strong

A listserv is an email distribution list that allows agencies to communicate with other state agencies about property that is no longer needed. The listserv formerly known as “Purchcomm” was renamed MOREuse to more accurately reflect the purpose of this surplus property disposal tool. More than 500 state employees utilized MOREuse to streamline the surplus property disposal process and save money. It is estimated state agencies saved more than \$146,000 by using this tool in FY18.

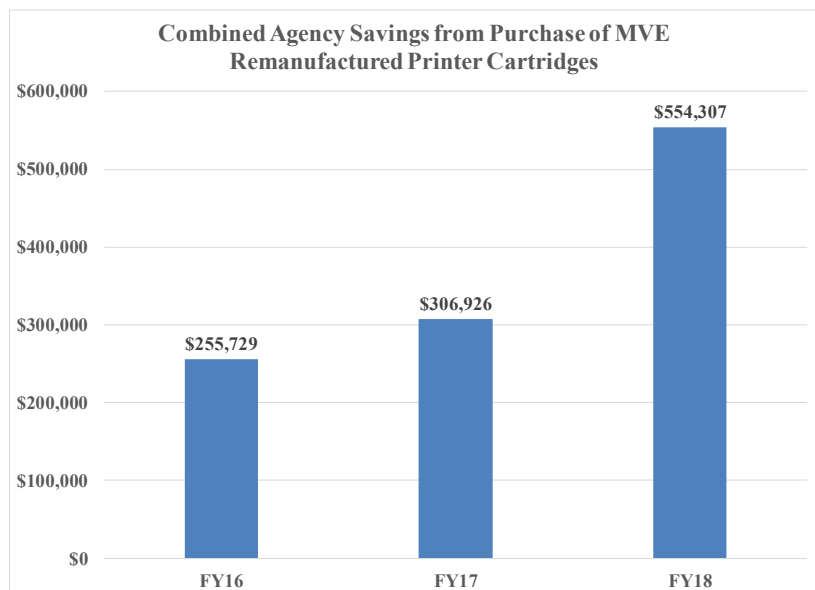
A state employee must subscribe to MOREuse in order to participate. The subscription page is available at <https://lists.mo.gov/mailman/listinfo/moreuse>.



Remanufactured Toner Cartridges: State Agency Savings

From FY16 through FY18, state agencies saved more than \$1.1 million by utilizing Missouri Vocational Enterprises’ (MVE) Printer Cartridge Remanufacturing Service. This service provided state agencies an opportunity to realize significant savings and reduce waste by reusing toner cartridges.

The chart to the right illustrates the combined agency savings over the past three years for agencies that purchased remanufactured toner cartridges from MVE. Savings are estimated by calculating the difference in price between MVE toner cartridges and non-recycled toner cartridges available from the office supply contract.



FY18 Overview

Recycled Content Procurement

State Agencies Close the Loop with Paper Procurement

In FY18, 80% of agency paper purchases included recycled content. The state of Missouri spent \$56,533 on recycled “Fine Paper Products” in FY18 for approximately 2,179 cases of recycled paper. A majority of this paper is printer/copier paper made with 30% post-consumer recycled paper. Purchasing this type of recycled paper compared to purchasing the same amount of virgin paper translates into the following estimated benefits:

- ♻️ 2,081 fewer trees (347 fewer tons of wood used)
- ♻️ 1,530,000 less gallons of water – enough to fill 2 olympic-sized swimming pools
- ♻️ 1,428,000 fewer pounds of CO2 equivalent – 130 fewer cars / year
- ♻️ 83,400 less pounds of solid waste – 19,200 Americans generating no waste for one day
- ♻️ 1.95 billion fewer BTUs – enough energy to power 19 homes in Missouri for a year!

FY18 Purchases of Recycled Paper Compared to Virgin Paper

Product Category	Recycled Paper Purchases	Virgin Paper Purchases	Recycled Paper Purchases as a % of Total Purchases in Product Category		
	FY18	FY18	FY18	FY17	FY16
Fine Paper Products (office, copy, fax)	\$56,533	\$112,040	34%	35%	43%
Course Paper Products (napkins, towels, tissues)	\$1,846,548	\$1,018	100%	96%	92%
Forms (continuous & snap out)	\$1,200	\$0	100%	100%	100%
Envelopes (Plain or Printed)	\$632,565	\$47,040	93%	100%	99%
Printing by contractors (40% of total charge is attributable to paper - figures appearing in this row represent paper cost only)	\$394,214	\$587,976	40%	26%	24%
Overall Totals	\$2,931,060	\$748,074	80%	68%	66%

RSMo 34.032 established attainment goals for state agencies to purchase certain percentages of products made from post-consumer recovered materials. Beginning in 1991, the goal was set at 10% of paper purchases were to be manufactured from post-consumer material. The goal was increased to 60% for the year 2000 - the last year a goal was specified. Note: See Appendix B for additional information about paper purchases as well as non-paper recycled-content product purchases.

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FY18 Overview

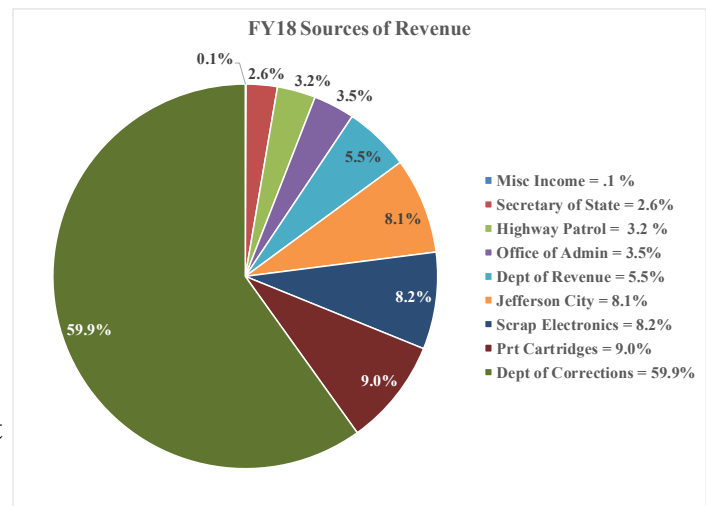
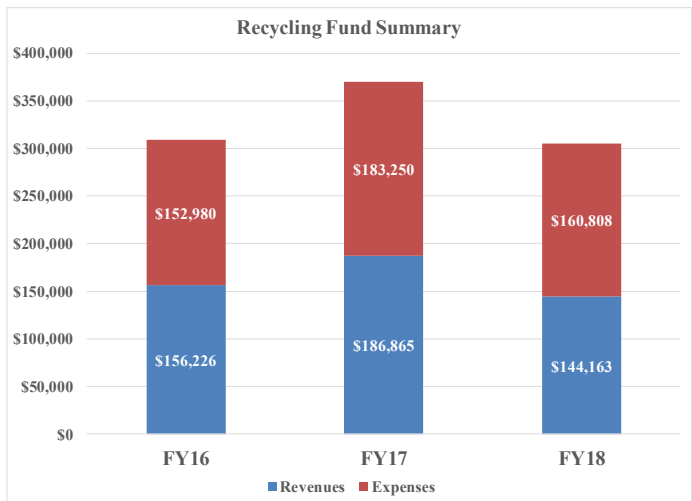
State Recycling Fund

Missouri's State Recycling Fund was established by RSMo 34.032 and states that "Proceeds from the sale of recycled materials may be used to offset costs of the recycling program."

Recycling revenues decreased 23% from FY17 to FY18. One cause is the international market disruption caused by China's National Sword Policy which severely restricted imports of scrap materials. However, Midwest markets have proved to be more resilient than the markets on the coasts.

In FY18, recycling funds helped to further the following recycling efforts throughout state government:

- Distributed more than 10,000 plastic bags for can, bottle, and paper collection
- Purchased 200 recycling containers
- Distribution of 200 recycling labels and signs
- Purchase of a forklift for recycling operations at Tipton Correctional Center
- Fluorescent lamp and PCB ballast recycling / disposal fees
- Purchase of a baler for South Central Correctional Center (Licking)
- Baler supplies and maintenance
- Supplies for in-vessel composters located at Ozark Correctional Center and Northeast Correctional Center



Expenses listed in the bar chart at the top of this page include operations, salary, fringe, and fund transfers to the Heating Assistance Program.

The top three sources of revenue in FY18 were the Department of Corrections (60%), printer cartridge sales (9%), and scrap electronics (8%) [see chart above].

Contributions to the Heating Assistance Program (Utilicare)

Excess revenues from the sale of recyclable materials are transferred to the Heating Assistance Program (HAP) managed by the Department of Social Services pursuant to RSMo 34.032. The HAP, also known as Utilicare, provides financial assistance to low-income Missourians for heating their homes during winter months.

As a result of state employee recycling efforts, the MSRP made a \$30,000 contribution to the HAP in FY18. The \$30,000 transferred to the HAP in FY18 will help approximately 150 households in Missouri to pay their heating bills.

III. Recycling Resources

Missouri State Recycling Program

Office of Administration

Division of General Services

Internet: <http://oa.mo.gov/general-services/missouri-state-recycling-program>

Email: recycling@oa.mo.gov

Phone: 573-751-3384

The Missouri State Recycling Program (MSRP) works with state agencies to increase purchases of recycled content products, reduce their waste stream and increase collection of materials for recycling. The MSRP website is a good resource for state contracts that offer recycled-content products as well as recycling services.

Environmental Improvement and Energy Resources Authority / Market Development Program

Internet: <http://eiera.mo.gov/mo-market-dev-program/>

Email: eiera@dnr.mo.gov

Phone: 573-751-4919

The Missouri Market Development Program promotes the development of markets for recovered materials and recycled content products throughout Missouri by providing businesses, governments, and other organizations with financial assistance and information services.

Solid Waste Management Program

Missouri Department of Natural Resources

Internet: <http://www.dnr.mo.gov/env/swmp/index.html>

Email: swmp@dnr.mo.gov

Phone: 800-361-4827 or 573-751-5401

The Solid Waste Management Program (SWMP) works with citizens, businesses, industry, and government to continue increasing material reuse and recycling. The SWMP website is an excellent resource for information dealing with all aspects of solid waste management in Missouri.

Missouri Vocational Enterprises (MVE)

Missouri Department of Corrections

Internet: <http://www.doc.mo.gov/mve>

Phone: 800-392-8486 or 573-751-6663

The Department of Corrections vocational training program offers the following products and services that meet “buy recycled” criteria. MVE products and services are only available to state agencies and other tax-supported entities.

MVE Recycled-Content Products

MVE Recycling/Remanufacturing/ Refurbishing Services

- Toner Cartridge Refill Service
573-751-3224 ext. 1260
- Furniture & Office Panel (cubicle) Refurbishing
573-751-6663 or 800-392-8486

- Park Bench & Picnic Table: Recycled Plastic
- Cardboard boxes: 65 percent post-consumer content
- Plastic bags: 30 percent recycled material
- Metal products: 28 percent post-consumer content
- Toilet paper: 100 percent recycled material
- Envelopes: 30 percent post-consumer content

IV. Appendices

Appendix A: Department reports of materials recycled

- ∞ Pounds
- ∞ Number of Items
- ∞ Gallons

Appendix B: Department reports of recycled-content product procurement

- ∞ Non-Paper Recycled-Content Products Procured
- ∞ Recycled-Content Paper Products Procured

Appendix A: FY18 Department Reports of Materials Recycled

Number of Pounds Recycled	Agriculture	State Treasurer	Conservation	Corrections		Economic Development	Elementary & Secondary Educ.	Health & Senior Services		House of Representatives	Insurance, Finan. Inst., Prof. Reg.	MCHCP	Mental Health	Natural Resources	Office of State Courts Supreme Court		Office of Administration	Public Safety	Revenue	Secretary of State	Senate	Social Services	Transportation		Totals by Material
Aluminum ***	C	C	480 C	30,121 C	C	C	C	C	C	C	C		1,330 C	6,689 C	C	C	474 C	C	C	C	C	C	244,982 C	284,076	
Ballasts			110											25			4,380					300	4,815		
Batteries (Single-Use & Rechargeable)	468		308	2,840	23	20							27	904			10,280	34,444			6		969	50,289	
Cardboard ***	5,000 C	C	7,935 C	882,273 C	C	C	C	C	C	C	C	1,200	117,820 C	12,483 C	C	C	3,640 C	2,050 C	34,246 C	C	C	C	500 C	1,074,685	
Carpet ***														35								100	16,892		
Commingled Materials ***		C	2,000 C	638 C			C						C	93,948 C			C		C		C	62,000	602,860		
Electronic Scrap ***				7,018		3,610			1,517		2,117	2,153	4,433	3,099	6,050	16,982	4,000	70	8,050	598,303	364,395	22,800	2,500	3,119,921	
Food-Yard Waste														351,112										355,112	
Glass			265										600	1,120										11,354	
Magazines & Catalogs			40										125,648	23,061										1,830	
Mixed Office Paper ***	C	C	48,990 C	67,784 C	C	C	C	C	C	C	2,720 C	4,500 C	C	C	C	C	C	C	C	C	C	C	2,500 C	3,119,921	
Newsprint	6,630		20										900	1,070										8,620	
Pallets				211,700									7,100	1,975			6,250	12,500				17,450	256,975		
Pharmaceuticals													350											350	
Plastic ***	2,500 C	C	4,115 C	7,695 C	C		210 C	C	C	C		600	7,480	8,041 C	C	C	C	C	C	C	C			32,887	
Rubber, Tires ***	860		11,820											116,531			18,680	43,600				351,020	916,251		
Scrap Metal	6,700		54,846	243,597									8,256	63,649			51,337	85,995	3,560			4,321,158	4,839,098		
Telephone Books													425	160				20						605	
Textiles														42										42	
Tin / Steel Cans ***	C	C	20 C	512,269 C	C		C	C	C				13,641	68 C	C	C	C	C	C	C	C			525,998	
Totals Reported by Agency	22,158	6,094	130,949	1,965,935	23	3,610	230	1,517	2,720	8,417	285,730	696,435	3,099	101,091	207,711	636,109	365,011	302	38,005	5,001,335					

Total Pounds Recycled in FY18:
12,405,432
6,203 Tons

Note on Boxes with C's: A "C" in a box on this table indicates an agency recycled the designated item by utilizing the Jefferson City (JC) or St. Louis recycling contracts (StL). Materials collected via the JC contract include **Aluminum, Cardboard, Mixed Office Paper, Plastic, and Steel (tin) Cans**. A "C" in the commingled materials row indicates that agency utilized the StL contract. A box that has a number over a "C" indicates the agency reported material that was recycled statewide, but not reported in the JC or StL contract figures. For example, Mental Health reported 1,330 pounds of aluminum recycled and Mental Health offices in JC utilized the JC Recycling Services contract to recycle aluminum.

*****Note on "Totals by Material":** This column includes collection totals as reported by the recycling contractor for the following materials: **Aluminum, Cardboard, Carpet, Commingled, Electronic Scrap, Mixed Paper, Plastic, Rubber Tires, and Steel Cans**. Figures reported by the contractor do not appear in the table on this page. These figures are summarized in a table at the top of p. 23. Agencies that utilized a recycling contract, but do not appear in this table include: **Higher Education, Labor & Industrial Relations, Environmental Improvement Energy Resources Authority, Lottery, Tax Commission, MOSERS, Governor Office, Attorney General, Auditor, and House of Representatives**. Amounts of materials recycled by these agencies are included in the "Totals by Material" column. (see explanation under "contractual reporting" on p. 23.)

Appendix A: FY18 Department Reports of Materials Recycled

Summary Information for Table on Page 22 for Contractual Reporting and Other Recycling Services

Total pounds recycled by agencies utilizing the Jefferson City, St. Louis, Kansas City, and Onsite Document Destruction recycling contracts are summarized in the table to the right. These figures are reported as cumulative totals. Due to contract reporting, data is reported by building and it is not feasible to separate data by agency where there are multiple agencies in the same building.

FY18 Total Pounds Recycled via Contracts	Jefferson City	St. Louis	Kansas City	Onsite Document Destruction
Mixed Office Paper	912,068		4,672	934,430
Cardboard			7,538	
Commingled	297,565	146,709		
Plastic Wrap	1,746			

FY18 Total Pounds Recycled via Other Agreements	Electronic Scrap	239,820
	Carpet Tiles	16,757
	Rubber, Tires	373,740

Pounds recycled by agencies utilizing other recycling service agreements is summarized in the table to the left. All numbers in the tables on this page are reflected in the "Totals by Material" column for the respective type of material in the table on p. 22

Number of Items and Gallons Recycled Table

Departments Reporting	Number of Items Recycled					Number of Gallons Recycled					
	Books, Bound Publications	Cell Phones	Fluorescent Lamps	Printer Cartridges	Fuel/Oil Filters	Anti-freeze	Fuel, Diesel	Fuel, Gasoline	Oil, Cooking	Oil, Motor	Paint
Agriculture							412	2,578	1,600	125	
Conservation			6,258	232						1,415	
Corrections		35	11,953	2,430							
Health & Senior Services				36							
MCHCP				100							
Mental Health				1,492		10			2,313	110	
Natural Resources		22	1,024	767	138	71			25	1,200	48
Office of Administration			32,365	91					60	1,809	
Public Safety	200	400	1,960	917		300			1,273	12,434	
Revenue				4							
Social Services				46							
Transportation		110	6,690			3,650				41,585	
Treasurer's Office				87							
TOTALS	200	567	60,250	9,918	138	4,031	412	2,578	5,271	58,678	48

Note on Total Printer Cartridges: 3,716 printer cartridges were recycled by employees using a statewide service for this item and are included in the TOTALS amount shown in this table. **Note on Agency-Specific Printer Cartridges:** Figures appearing for individual agencies may not be an accurate reflection of the number of printer cartridges recycled. In some buildings agencies utilize a centralized recycling drop-off for cartridges and it is not feasible to separate agency data once recycled. See p.11 "Printer Cartridge Recycling" for additional explanation.

Appendix B: FY18 Department Reports for Recycled Content Product Procurement

Non-Paper Recycled Content Procurement	Agriculture	Corrections	Economic Development	Elementary & Secondary Education	Health & Senior Services	Higher Education	Insurance, Financial Inst., Professional Reg.	Mental Health	Natural Resources	Office of Administration	Public Safety	Revenue	Secretary of State	Social Services	Treasurer's Office	Category Totals
Batteries, Rechargeable								\$839			\$11,520					\$12,359
Carpet / Construction Materials		\$3,084														\$681,635
Cardboard Boxes		\$18,667	\$327	\$2,439	\$30	\$360	\$412	\$2,834		\$1,447	\$103				\$484	\$96,139
Janitorial Supplies		\$440,591		\$14,183				\$7,000	\$4,837	\$3,472	\$9,546					\$699,925
Metal Products		\$109,648		\$1,246			\$2,949		\$41,287		\$10,744	\$3,105,810	\$522			\$3,281,891
Office Supplies	\$5,012	\$2,815		\$86,324					\$5,024	\$1,290	\$2,823				\$1,010	\$556,315
Park / Playground Supplies		\$1,362														\$42,331
Printer Cartridges, Remanufactured		\$219,114			\$3,985			\$97,272	\$2,127	\$8,906	\$26,117	\$440		\$4,704		\$362,664
Promotional Products										\$671						\$671
Recycling Containers & Equipment		\$5,740								\$12,529	\$315					\$18,584
Remanufactured Furniture																\$261,410
Vehicle Maintenance Supplies								\$125		\$18,300						\$18,425
Other (MSHP, refurb signs)											\$276					\$276
Agency Totals	\$5,012	\$801,022	\$327	\$104,191	\$4,015	\$360	\$3,361	\$107,231	\$53,276	\$46,615	\$49,647	\$3,106,250	\$522	\$4,704	\$1,494	\$6,032,625

Total Dollars Spent on Non-Paper Recycled-Content Products in FY18 = **\$6,032,625**

Notes: When adding figures in each row the following needs to be considered. **Carpet contractors** reported agency purchases of **\$231,577**. **Construction Materials** contractors reported purchases of **\$446,973**. **Office Supplies** contractors reported purchases of **\$452,715**. MVE provided procurement figures for **Cardboard Boxes (\$96,140)**; **Janitorial Supplies-plastic bags (\$689,453)**; **Metal Products (\$176,081)**; **Park & Playground Supplies-Recycled plastic picnic tables & benches (\$40,969)**; and **Remanufactured Furniture & Recycled Fabric (\$261,410)**. When adding the figures in each row -- these amounts need to be included in the sum. For additional information on recycled-content products and services from MO Vocational Enterprises see p. 20 of this report.

Appendix B: FY18 Department Reports of Recycled and Virgin Paper Purchases

This table provides detail for the summary chart appearing on page 18 of this report.

GRAY HIGHLIGHT = VIRGIN
GREEN HIGHLIGHT = RECYCLED

FY18 Department Detail of Recycled & Virgin Paper Purchases	Fine Paper Products (printer / copier paper)	Course Paper Products (toilet paper / paper towels)	Forms - Continuous & Snap Out (high speed printers)	Envelopes	Printing by Contractors
Judiciary (100)					
	\$1,890				
SOS (231)					\$110,994
	\$9				
Auditor (251)					
STO (272)	\$18,074	\$438			\$1,586
	\$5,639	\$76		\$13,425	
AGO (282)					
	\$112				
OA (300)	\$5,711		\$305,768		\$1,189,871
	\$152,483				
MDA (350)	\$4,089	\$3,432			\$19,185
DIFP (375)					
				\$2,395	
MDC (400)					\$12,196
		\$1,007			
DED (419)					
				\$458	
DESE (500)					
		\$1,815		\$44,424	
DHE (555)					
DHSS (580)					\$56,211
MoDOT (605)					
		\$690			
DOLIR (625)				\$1,595	
DMH (650)	\$273	\$1,514	\$2,651	\$263	\$3,464
	\$3,871	\$2,598	\$1,013		\$150
DNR (780)					\$1,738
	\$16,132	\$7,020		\$10,022	\$12,261
DPS (812)	\$413	\$6,000		\$1,600	
	\$2,433	\$11,549		\$5,821	\$172,383
DOR (860)					
	\$1,770				
DSS (886)					\$27,553
	\$6,032			\$47,266	
DOC (931)		\$862	\$74		\$7,055
		\$1,385,618		\$8,788	\$377,970